

## **REMARKS**

This Amendment is in response to the Office Action dated June 9, 2010. Applicant respectfully requests reconsideration and allowance of all pending claims in view of the above-amendments and the following remarks.

### **I. CLAIM OBJECTIONS**

Claim 58 was objected to due to a typographical error.

With this amendment claim 58 is amended to replace “nose” with “node” as suggested in the Office Action.

### **II. CLAIM REJECTIONS – 35 USC § 112**

Claims 48-49 and 67 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite.

With this amendment, claim 48 (and similarly claims 61 and 72) is amended to replace the two instances of “a corresponding estimated image” with “a corresponding estimated motion image” and “a corresponding estimated texture image”, respectively, to distinguish these terms.

Claims 49 and 67 are amended to replace “and/or” with “or” as suggested in the Office Action.

Numerous other amendments are made to the pending claims to place them in a format more consistent with U.S. practice.

None of the claims are amended to distinguish over any prior art reference.

### **III. CLAIM REJECTIONS – 35 USC § 101**

Claims 61-63 were rejected under 35 U.S.C. §101 as being directed to a non-statutory “signal”. Accordingly, claims 61-63 are amended to be directed to a “method”, which is clearly statutory under §101

Claim 71 was rejected under 35 U.S.C. §101 as being directed to a non-statutory digital data carrier. Claim 71 is cancelled.

Claims 72-73 were rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. Claims 72-73 are amended to be directed to a statutory computer-readable medium comprising program code instructions recorded thereon. Also, claims 72 and 73 are amended to tie the instructions to performance of a method, when executed by a computer.

Thus, all pending claims are now believed to be statutory.

#### IV. CLAIM REJECTIONS – 35 USC § 102

Claims 48-57, 60, 64-69 and 72-73 were rejected under 35 U.S.C. 102(b) as being allegedly anticipated by Cammas (Proceedings of SPIE-IS&T, vol. 5022, pp. 358-365) or in the alternative under 35 U.S.C. 103(a) as obvious over Cammas.

The Applicant respectfully disagrees.

Indeed, Cammas doesn't disclose, or suggest, the idea of comparing a motion image and a corresponding estimated motion image, so as to obtain a motion difference image, and of comparing a texture image and a corresponding estimated texture image so as to obtain a texture difference image. The Office Action appears to acknowledge this difference by stating, concerning Cammas, "temporal transform in Fig. 5 applies to both Motion as well as text[ure], to get the difference".

The use of motion difference image and texture difference image obtained according to an embodiment of claim 48, for example, make it possible to reduce the quantity of data to be transmitted, or to be stored, since the number of information elements to be encoded is sharply reduced.

Moreover, in an exemplary embodiment, the images are rectified using reference grids, in order to be independent from motion (see paragraph 6.5 "Separation of motion and texture" – "Piling of the images on a reference grid"). The discussed invention in at least one embodiment thus enables independent processing of motion and texture information, since the effect of motion has been eliminated in the texture information.

In other words, texture information on the one hand, and motion information on the other hand can be processed separately. A more efficient encoding can thus be obtained, exploiting to the maximum the space/time correlations present in the video (especially the correlations in the texture of images), while permitting the use of less motion information (and therefore less expensive) at the decoding side.

The discussed invention thus has advantages compared to prior art techniques, and independent claims 48, 64, 68, 69, 72 and 73 are new and non obvious in view of Cammas.

V. CLAIM REJECTIONS – 35 USC § 103

Claim 58 was rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Cammas in view of Van Beek, U.S. Patent No. 5,936,671.

Claim 59 was rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Cammas in view of Nelson (PhD Thesis, Anglia Polytechnic University, 2001)

Claim 70 was rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Cammas.

A. **VAN BEEK (US 5,936,671)**

This document relates to an object-based video processing technique, known as VOP (*Video Object Plane*) using 2D-mesh.

The Examiner considers that claim 58 is unpatentable over Cammas in view of Van Beek.

Firstly, neither Cammas, nor Van Beek discloses the idea of comparing a motion image and a corresponding estimated motion image, and comparing a texture image and a corresponding estimated texture image, in order to obtain a motion difference image and a texture difference image. As a consequence, their combination does not reduce the quantity of data to be transmitted.

Secondly, figure 5 from Van Beek shows an object-based motion estimation and forward motion compensation (column 9, lines 6-9), but doesn't suggest the idea of defining a texture mask.

Finally, the use of a reference grid defined by the position of nodes of a mesh, and the idea of projecting an image on the reference grid, are not disclosed in Van Beek.

The combination of Cammas and Van Beek is thus not relevant toward claim 58.

**B. NELSON (PhD Thesis Anglia Polytechnic University, 2001)**

This document relates to the construction of some Riesz basis families and their application to coefficient quantization, sampling theory and wavelet analysis.

The Examiner considers that claim 59 is unpatentable over Cammas in view of Nelson.

Neither Cammas, nor Nelson discloses the idea of comparing a motion image and a corresponding estimated motion image, and a texture image and a corresponding estimated texture image, in order to obtain a motion difference image and a texture difference image. As a consequence, their combination does not reduce the quantity of data to be transmitted.

Moreover, Nelson doesn't suggest applying this type of wavelets to the encoding and decoding of video sequences. Thus, one skilled in the art would have no motivation to combine this document Nelson with the document Cammas, in order to apply antisymmetry to the wavelet coefficients corresponding to an edge of the image.

The combination of Cammas and Nelson is thus not relevant toward claim 59.

Regarding claim 70, Cammas does not teach or suggest the subject matter of this claim for the same reasons as were discussed with reference to claim 48, from which claim 70 depends.

For at least the above-reasons, all pending claims are believed to be new and non-obvious over the references applied by the Examiner.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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